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NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

Division of Waste Management
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Solid Waste Section

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March 30, 2009

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Mr. Ronnie E. Petty III
A-1 Sandrock, Inc
2901 Bishop Road
Greensboro, NC 27406

Subject: Comments on Permit to Operate Application (Cell 1A) for A-1 Sandrock Construction and Demolition Debris Landfill (C&DLF)
Permit No. 41-17, Guilford County, North Carolina, Document ID No. (DIN) 7095

Dear Mr. Petty:

The Division of Waste Management (DWM), Solid Waste Section has received the following permit application document:

- *"Facility and Operation Plan Update – A-1 Sandrock C&DLF (Phase 1) and Processing Facility"* dated February 2009. Prepared by David Garrett & Associates. DIN 7039.
- *"Permit to Operate Application - A-1 Sandrock C&DLF Phase 1"* dated March 2007 and resubmitted on March 20, 2009. Prepared by David Garrett & Associates. DIN 7076.

The Solid Waste Section conducted a review of compliance with the Solid Waste Management Rule (Rule), 15A NCAC 13B .0500 and requests the following additional information:

*Facility and Operation Plan Update*

**1.0 Facility Plan**

1. Please provide the signed and notarized Franchise Agreement for the proposed C&DLF.

2. (Section 1.3) There is discrepancy of the county names listed in the service area between the amended Franchise Agreement and Section 1.3. Please clarify.

3. (Sections 1.3.2 & 1.3.4) There are discrepancies of the quantities of intermediate cover & net air space/disposal capacity between Section 1.32 [224,000 cy] and Section 1.3.4 [217,000 cy]. Please clarify.

4. (Section 1.3.4) The proposed final cover thickness is three (3) feet as described in Section 8.2.1.3. The soil quantity for the final cover needs to be revised accordingly.

5. (Section 1.3.4 on Page 4 & Section 8.2.2) The Permit to Construct (PTC) dated June 1, 2006 approves the gross capacity of 478,484 cy for the Phase 1 (including Phases 1A, 1B, & 1C) development. Please explain why the "total permit capacity" described in the Section 1.3.4 is increasing to 569,811 cy from 478,484 cy. If the Permittee intends to revise the approved the gross capacity of 478,484 cy, an application for "substantial amendment" must be submitted to DWM for review and approval in accordance with Rule .0533(a)(3) because the quantity of the solid waste to be disposed of in the C&DLF has increased 10% more.

6. (Section 1.3.4 on Page 4 & Section 5.4.2) The following correct information shall be used in this section: (i) the approved waste footprint of the C&DLF landfill is 21.9 acres; (ii) the approved Phase 1 occupies 8.18 acres; (iii) the footprint of Phase 1A cell is 2.54 acres. Please make correction accordingly.

**2.0 Engineering Plan**

7. (Section 2.4.5 & Appendix 3) The cover page of Appendix 3 said the S&EC plan has been approved by the Division of Land Resources, Land Quality Section in 2003. Please provide a copy of the approval documentation appended to Appendix 3.

**3.0 Construction Plan Requirements**

8. (Section 3.7) Please provide the Drawings EC4 & EC5.

**4.0 Construction Quality Assurance (CQA)**

9. Please provide "Technical Specifications" for the proposed compacted soil barrier layer (referring to Section 8.2), landfill gas vent (referring to Section 8.1.2 & Detail G, Drawing EC2).

10. (Section 4.5 on Page 31) Please add the QA/QC testing results and the as-built drawing of the complete compacted soil barrier/low permeability layer to the CQA report.

11. (Table 4C) Please specify the maximum effective confining pressure and the maximum hydraulic gradient to be used for the permeability test by ASTM Method D5084.

12. (Table 4C) Please specify the testing method and frequency and minimum passing criteria of the internal friction angle between the compacted soil barrier and vegetation soil layer. The specifications must incorporate the results obtained from soil stability analyses on the final soil cover system in Appendix 2.

**5.0 General Facility Operations Plan**

13. (Sections 5.4.1 & 5.5) Please provide drawings to show layout of the processing facility, seated in the future Phase 1B area. The drawings should include the 100-feet buffer between the processing area and C&D waste disposal cells, the 100-feet buffer between the LCID waste processing area and C&D waste procession area, locations for loading/unloading, sorting, shredding, grinding, and storing/stockpiling the segregated recyclable wastes – LCID & C&D wastes and rejected non-C&D wastes, E&S and stormwater run-off control measures, access roads (traffic routes – in & out), the scale house, office building (s), security features (gates and fencing), locations of areas proposed for asbestos waste disposal and the location of soil stockpile and borrow areas.

14. (Section 5.6) Describe compliance with the training requirements of Rule .0542(j)((2)?

15. (Section 5.9.1) What provisions are there for the fire prevention approaches and measures associated with the raw material and finished product stockpiled/stored in the processing facility?

16. (Section 5.9.1) Please provide the minimum time-frames for verbal and written notification of a fire and/or an explosion, if occur to DWM.

17. (Section 5.11.6) Describe compliance with any applicable requirements developed under a State Implementation Plan specifically for Greensboro-Winston-Salem region.

18. (Section 5.12) The Operating Record must include the quarterly methane gas monitoring results, the approved Landfill Gas Monitoring and Control Plan, the notation of date and time of placement of cover material, all audit records and compliance records, and updated financial assurance document.

**6.0 Processing Facility Operation Plan**

19. (Section 6.3) The asbestos containing material (ACM) is listed as a prohibited waste in this section and Table 1, but the Sections 5.5, 7.1.2, & 7.3.5 indicate the ACM can be disposed in the C&DLF. Additionally Table 1 lists construction and demolition wastes as prohibited wastes which are inconsistent to the Section 6.2.

20. (Section 6.4) To be consistent with Section 5.4.1, this section should state that the sorted material will be removed from tipping area at the conclusion of each operating day and placed in covered containers.

21. (Section 6.4.5) This section needs to describe the maximum size (height and base diameter) of the temporary stockpile (if not stored in covered roll-off box) of each raw material at the processing facility at any time. The selection of maximum size of stockpile needs to incorporate the factors of safe operation, storage, and fire prevention.

22. (Section 6.4.5) This section needs to propose the maximum capacity (volume or weight) of each processed recyclable wastes (Sections 6.4.2 & 6.4.3) and rejected wastes (Section 6.4.4) that can be allowed to store/stockpile at the processing facility during the storage periods proposed in Section 6.0.

23. (Section 6.4.5) The proposed minimum frequency of turning or removing the entire stockpile of finished products is inconsistently described in Sections 5.4.1 [at least twice per year] and 6.4.5 [quarterly] and Appendix 4D [twice per year]. Please clarify.

24. Please provide the information of the companies that have contracted to haul and/or receive the final goods include name of the company and representative, address, and phone number and the written agreement.

**7.0 C&D Landfill Operation Plan**

25. (Sections 7.4.3 & 8.2.1.4, Compacted Barrier) Based on the experiences from waste industries and academic or technical literatures, the maximum lift thickness in a loose condition is 9 inches, and the maximum thickness of the compacted lift is 6-inches. Please revise the criterion accordingly.

**8.0 Closure and Post-Closure Plan**

26. (Table 8A, on page 71) In Table 8A please include the costs for installing methane gas control – passive gas vent and/or gas well in the closure activities. Additionally, the closure acreage for Phase 1 is 8.18 acres, not 11.5 acres shown in the first two cost items. Please make necessary correction.

27. (Section 8.3.1.3 & Table 8B & Section 9.4, the last paragraph) The landfill gas monitoring shall be conducted quarterly in accordance with Rule .0544(d)(2)(B). Please make correction on sampling frequency.

28. (Table 8C) Please revise the cost estimate to represent four (4) quarterly gas samples and two (2) semiannual water quality samples.

**9.0 Facility Monitoring Plan**

29. (Section 9.3 and Section 1.0 of Appendix 6) Please propose the surface water quality standards, in accordance with 15A NCAC Subchapter 2B, for monitoring and protecting all surface water features in and adjacent to the landfill facility from landfill operation.

30. (Section 9.4, the fifth line on Page 78) This section reports that "No pipelines or trenches exist nearby to serve as potential conduits for off-site landfill gas migration at this facility...." This statement is not correct. There are sanitary sewer lines and natural gas pipeline on the north side of the proposed waste footprints – the closest distances of approximately 150 feet and 400 feet, respectively. Please clarify.

31. (Section 9.4, on Page 79) There is discrepancy of the density of passive landfill gas vents to be installed in the final cover system between Section 8.1.2 (three vents per acre) and Section 9.4 (one vent per two acres).
32. (Section 9.4.2) Permanent landfill gas probes should be placed along the north side of the waste footprint because of the sanitary sewer lines, a potential path for landfill gas off-site migration. What is the assurance

of the data representative collected from the 3-foot long punch hole? The obtained data may not detect gas migration path deeper than 3 feet which may travel through the porous on-sit soil toward the sewer trench. Additionally the monitoring well MW-5 is seated on the north side of the sewer line; data collected from the well can not provide the early warning of landfill gas migration toward the sanitary sewer lines.

33. In accordance with Rule .0544(d)(3) the Landfill Gas Monitoring and Control Plan must discuss the action plan (including notification requirements) to be taken when the methane or explosive gas level exceed the regulated limits. Please revise the proposed Landfill Gas Monitoring and Control Plan accordingly.

34. (Section 9.6) Please sign, seal, and date the Facility Monitoring Plan Preparation and Certification Page as described in this section.

**Appendix 6 Water Quality Monitoring Plan Amendment Sampling and Analysis Plan**

35. (Section 1.1) Please indicate which well is the background well. Groundwater flow direction was stated to be west toward Hickory Creek, and both monitoring wells MW-1 and MW-3 would appear to be side-gradient to the proposed Phase 1. Please provide groundwater elevation contour maps illustrating flow of groundwater to support background/upgradient well location(s).

36. (Section 3.1) The third paragraph reference statistical methods and Rule .1632, which applies to MSW landfills. This rule is not applicable to C&D landfills.

37. (Table 1) The Top of Casing (TOC) Elevation data and Ground Elevation data for the five monitoring wells are listed as TBD. Please complete Table 1 with appropriate TOC and ground elevation data.

*Permit to Operate Application*

**CQA Report for Cell 1A**

38. Please provide a series of color photographs of the major project features and the "as-built" drawings for completed Phase 1A cell which was surveyed, signed, and sealed by L. Dennis Lee, RLS to confirm that the lines and grades of the constructed cell are consistent with the Division-approved plan.

39. Was there any embankment constructed during the course of Phase 1A cell construction? If so, please provide the field test results, appended to the CQA report, in accordance with the Division-approved Technical Specification- Section 02223, Item D. 9 & Table 1.

Please be aware of the access road across the easement of pipeline owned by Colonial Pipelines Company. Special pipeline protection measures may be required and approved by Colonial Pipelines Company. Please also incorporate requested information, document, revisions, and responses to a new submittal including a written hard copy and an electronic copy (including figures) of the revised permit application. The Solid Waste Section appreciates your efforts and cooperation in this matter. If you have any questions or would like to schedule a meeting to discuss this matter further, please contact Ming-Tai Chao at (919) 508- 8507.

Sincerely,

Ming-Tai Chao, P.E.
Environmental Engineer II
Solid Waste Section

Christine Ritter
Hydrogeologist II
Solid Waste Section

cc: David Garrett, P.G. P.E.
Donna Wilson, DWM
Jason Watkins, DWM

Ed Mussler, Permitting Branch Supervisor
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